



KYORITSU

**PACKTEST**  
ION SELECTIVE

INSTRUCTIONS

# Total Nitrogen ( Inorganic )

Model WAK- TN*i*

Reduction and Indophenol Blue color comparison Method

Main reagent: Devarda's alloy, sodium hydroxide,  
Sodium salicylate

Range: 0 - 100 mg N/L (ppm)

## How to use

(1) Put 0.3 mL of sample to the Cell (PACKTEST Square Cup) with the small pipette.

(2) Add 1.5 mL of K-1 reagent with the large pipette.

(3) Add the K-2 reagent (content of one small pack).

(4) Put on the cap and shake the Cell for 30 sec.

(5) Remove the cap and leave for 15 minutes.

(6) Remove the line to clear the aperture from the top of the tube.

(7) Press the sides of the tube to expel approximately half of volume. Maintain pressed.

(8) Immerse the tube in the sample. Release the sides to fill the tube up to the half. Shake the tube 10 times.

(9) After 5 minutes, put the tube on the color chart as shown and compare with the standard colors.

## How to read the test

After the reaction time, compare the color of the tube with the standard colors. The nearest color indicates the measured value of the sample. A color between two standard colors indicates a value between the two standard values.

## Care in handling of PACKTEST before and after use

Keep PACKTEST in a cool, dry and dark place.

PACKTEST should be thrown with burnable garbage. Conform to the legislation of waste management.

Use a package as soon as possible after opening.

### First Aid Measures

K-1 reagent contains a strong alkali (pH>12.5). It is harmful and corrosive to eyes and skin.

Small pack reagent contains Devarda's alloy (Cu 50%, Al 45%, Zn 5%)

Eye contact → Immediately rinse eyes with water for at least 15 minutes. Consult a physician.

Skin contact → Immediately flush skin with water.

Ingestion → Immediately rinse mouth. Consult a physician.

In case of doubt, consult a physician.

**KYORITSU CHEMICAL-CHECK Lab., Corp.**37-11, DEN-ENCHOFU 5 CHOME, OHTA-KU, TOKYO 145-0071 JAPAN  
FAX: 81-3-3721-0666 <http://kyoritsu-lab.co.jp>

## PACKTEST Total Nitrogen (Inorganic)

### Features

The Total Inorganic Nitrogen PACKTEST allows to measure the sum of nitrate-nitrogen ( $\text{NO}_3^-$ -N), nitrite-nitrogen ( $\text{NO}_2^-$ -N) and ammonium nitrogen ( $\text{NH}_4^+$ -N) concentrations from various water samples. It is based on the Indophenol blue color comparison method used in the Japanese standard JIS K 0102 42.2.

### Cautions

1. The Total Inorganic Nitrogen PACKTEST allows to measure the Total nitrogen concentration from inorganic compounds. Total nitrogen of organic compounds can not be measured.
2. If the pH is below 4, adjust it a sodium hydroxide solution.
3. Remove the cap from the cup during the 15 minutes of waiting to prevent a leak of alkaline solution.
4. Ensure that PACKTEST tube is filled up to the half. If the tube can not be filled in one time, the tube must be shaken 10 times before the second filling.
5. Partially undissolved reagent from the K2 reagent will not affect the measurement.
6. Partially undissolved reagent in the tube will not affect the measurement.
7. Keep sample temperature in the range  $15^\circ\text{C}$  -  $30^\circ\text{C}$ .
8. Read the test under daylight type lamp.
9. Carefully rinse the small pipette before use with the sample.
10. Put the line back into the aperture before use to prevent reagent spilt.

### Interferences

Standard colors were determined from standard solutions. However, coexisting substances will cause inaccurate results. The list below reports ion concentrations under which ones interferences are insignificant:

- $\leq 1000$  mg/L :  $\text{Al}^{3+}$ ,  $\text{B}^{3+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Cl}^-$ ,  $\text{F}^-$ ,  $\text{I}^-$ ,  $\text{K}^+$ ,  $\text{Mg}^{2+}$ ,  $\text{Na}^+$ ,  $\text{PO}_4^{3-}$ ,  $\text{SO}_4^{2-}$ , anionic surfactant, Phenol, Residual Chlorine
- $\leq 500$  mg/L :  $\text{Ca}^{2+}$ ,
- $\leq 200$  mg/L :  $\text{Cu}^{2+}$
- $\leq 100$  mg/L :  $\text{Cr}^{3+}$ ,  $\text{Ni}^{2+}$ , formaldehyde
- $\leq 50$  mg/L :  $\text{Co}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Zn}^{2+}$
- $\leq 10$  mg/L :  $\text{CN}^-$ ,  $\text{Cr}^{6+}$ ,  $\text{Fe}^{3+}$
- $\leq 1$  mg/L :  $\text{Fe}^{2+}$

The Total Inorganic Nitrogen PACKTEST is not suitable for sea water samples.